



# The Open Journal of Occupational Therapy

Volume 8  
Issue 4 Fall 2020

Article 8

October 2020

## Occupational Therapy in Integrated Primary Care: Addressing the Needs of Individuals Experiencing Homelessness

Caitlin E. Synovec

*Health Care for the Homeless – USA, cesynovec@gmail.com*

MaryBeth Merryman

*Towson University – USA, bmerryman@towson.edu*

Josh Brusca

*Lutheran Immigration and Refugee Service – USA, jbrusca@hchmd.org*

Follow this and additional works at: <https://scholarworks.wmich.edu/ojot>



Part of the Occupational Therapy Commons

### Recommended Citation

Synovec, C. E., Merryman, M., & Brusca, J. (2020). Occupational Therapy in Integrated Primary Care: Addressing the Needs of Individuals Experiencing Homelessness. *The Open Journal of Occupational Therapy*, 8(4), 1-14. <https://doi.org/10.15453/2168-6408.1699>

This document has been accepted for inclusion in The Open Journal of Occupational Therapy by the editors. Free, open access is provided by ScholarWorks at WMU. For more information, please contact [wmu-scholarworks@wmich.edu](mailto:wmu-scholarworks@wmich.edu).

---

# Occupational Therapy in Integrated Primary Care: Addressing the Needs of Individuals Experiencing Homelessness

## Abstract

*Background:* Current health care policy supports occupational therapy services with individuals experiencing homelessness in primary care settings. Research on the impact of interventions is needed to support this emerging practice area.

*Method:* A retrospective, descriptive study was completed following the initiation of full-time occupational therapy services in an integrated primary setting and Federally Qualified Health Center (FQHC) for clients experiencing homelessness. This study evaluated: (a) percentage of referred clients who engaged in ongoing intervention; (b) diagnostic demographics of those referred; (c) functional goal types and frequency; (d) a comparison of preintervention Canadian Occupational Performance Measure (COPM) scores with postintervention scores.

*Results:* Analysis of data revealed clients referred for occupational therapy services present with complex co-morbidities. *t* tests for matched pairs ( $p < .05$ ) revealed that participants had a statistically significant improvement in COPM performance scores (69%) and in COPM satisfaction scores (73%) between baseline and postintervention. Diagnostic subgroups had a similar rate of improvement. Analysis of client identified COPM goals revealed a high rate of instrumental activity of daily living focused goals.

*Conclusion:* Integration of full-time occupational therapy services into FQHC settings increases client access to functional-based rehabilitation services that address physical and behavioral health. Individuals experiencing homelessness demonstrate improvement toward functional goals using client-centered goal setting processes and interventions.

## Comments

The authors report no potential conflicts of interest.

## Keywords

Federally Qualified Health Center, Canadian Occupational Performance Measure

## Credentials Display

Caitlin E. Synovec, OTD, OTR/L, BCMH; M. Beth Merryman, PhD, OTR/L, FAOTA; Joshua Brusca, LCSW

Copyright transfer agreements are not obtained by The Open Journal of Occupational Therapy (OJOT). Reprint permission for this Applied Research should be obtained from the corresponding author(s). Click [here](#) to view our open access statement regarding user rights and distribution of this Applied Research.

DOI: 10.15453/2168-6408.1699

Individuals experiencing homelessness have less access to and feel stigmatized by health care systems, seek less preventative health services, and are less likely to access rehabilitation services (Baggett et al., 2010; Coccozza Martins, 2008; Miller-Cribbs et al., 2016; Nickasch & Marnocha, 2009). The Patient Protection and Affordable Care Act (2010) supports the development of primary care models that integrate health care services to improve access and community tenure. Federally Qualified Health Centers (FQHCs) are designed to provide comprehensive primary and integrated health care to individuals who are low income and/or experiencing homelessness (LeBrun-Harris et al., 2013). Because homelessness is an emerging practice area, there is limited research regarding occupational therapy interventions in primary and integrated health care sites such as a FQHC (Donnelly et al., 2017; Murphy et al., 2017). Incorporating occupational therapy at primary and integrated health care settings where adults experiencing homelessness engage with health and social services, however, has the potential to increase these individuals' ability to access behavioral health and rehabilitation interventions and minimize contextual and symptomatic barriers that prevent participation in typical outpatient settings. This paper describes the initial outcomes of occupational therapy services in a FQHC providing individuals who are homeless or transitioning into housing access to functional-based interventions to increase self-management and home and community participation.

## **Literature Review**

### **Occupational Therapy and Homelessness**

Individuals who have experienced homelessness have an increased risk of mental health conditions, substance use, and chronic health conditions, as well as an increased incidence of brain injury (Foster et al., 2010; Jones et al., 2009; Stubbs et al., 2019; Substance Abuse and Mental Health Administration, 2011; Topolovec-Vranic et al., 2017; Zlotnick & Zerger, 2008). Each of these conditions can contribute to decreased cognitive performance, and those with multiple chronic conditions are more likely to experience negative impacts on functional cognition (American Occupational Therapy Association [AOTA], 2019; Pelimanni & Jehkonen, 2019; Wei et al., 2019). Despite a higher risk for mental health and chronic health conditions, individuals experiencing homelessness face significant barriers to managing their health and accessing health services, including rehabilitation services such as occupational therapy (Baggett et al., 2010; Miller-Cribbs et al., 2016; Reid et al., 2008). Individuals transitioning from homelessness into housing continue to experience decreased community engagement after receiving housing and demonstrate a need for attention to daily living skills to support overall health and recovery (Foster et al., 2010; Gulcur et al., 2007; Henwood et al., 2015a; Kloos & Shah, 2009; Marshall & Rosenberg, 2014; Tsai et al., 2012; Wong & Solomon, 2002). Evidence shows that individuals in permanent supportive housing programs have decreased community and social integration, despite maintaining stable housing, and many also report a lack of meaningful activity throughout their day (Baumgartner & Herman, 2012; Cherner et al., 2017; Henwood et al., 2015a; Tsai et al., 2012; Yanos et al., 2004; Yanos et al., 2007).

The context of homelessness combined with health co-morbidities puts individuals at higher risk of cognitive impairment and decreased opportunity to use and develop functional skills (Burra et al., 2009; Helfrich & Synovec, 2019). Studies identifying valued occupations of homeless individuals revealed varied priorities and goals, with attention to survival, identity and social connectedness, and self-care (Chapleau et al., 2011; Illman et al., 2013; Marshall et al., 2017; Muñoz et al., 2006; Salsi et al., 2017; Thomas et al., 2017). This population can benefit significantly from access to occupational therapy in order to develop functional living skills, address underlying cognitive deficits, increase self

and health management skills, and to more easily transition to and maintain independent living through occupational engagement (Gutman & Raphael-Greenfield, 2017; Helfrich & Fogg, 2007; Roy et al., 2017; Thomas et al., 2017). Current evidence additionally supports the effectiveness of occupational therapy interventions to address chronic health conditions, mental health diagnoses, and brain injury; supported interventions also include independent living, and cognitive and self-management skill development (Connolly et al., 2019; Gibson et al., 2011; Ikiugu et al., 2017; Leland et al., 2016; Powell et al., 2016; Pyatak et al., 2018; Radomski et al., 2016; Schwartz et al., 2017; Swarbrick & Noyes, 2018; Thomas et al., 2011).

### **Occupational Therapy and Integrated Primary Care**

The World Health Organization (WHO) has identified the need for integration of rehabilitation services in primary care settings to “minimize the disabling effects of chronic conditions . . . optimize the outcomes of other kinds of health interventions . . . [and] avoid costly hospitalizations and re-admissions” (2018). The WHO also identifies occupational therapists as key providers of rehabilitation services (2018). In the United States, there is a growing consensus in the profession that occupational therapy can have a significant role on interdisciplinary teams in integrated primary care settings serving clients with complex chronic conditions (Pape & Muir, 2019; Winship et al., 2019). There is limited research, however, on the role of occupational therapy in primary and integrative health care, especially on the impact on clients or contributions to the interdisciplinary treatment team (Chapleau et al., 2011; Dahl-Popolizio et al., 2016; Koverman et al., 2017). There have been many studies promoting efficacious community practice through integrated health delivery models, such as FQHCs, in which care for those with chronic, complex conditions is coordinated and delivered by a consistent group of providers, indicating a benefit to co-location of occupational therapy services in community settings (Dubuc et al., 2013; Ellis & Alexander, 2016; Engineer et al., 2015; Montenegro et al., 2011; Rumball-Smith et al., 2014). These models have identified important factors for success, such as an organizational culture of collaboration and teamwork. The profession of occupational therapy supports a role in primary care, particularly in response to legislative changes promoting integrated care (Muir, 2012). The role is often presented as a generalist with a depth of skill to address a range of health conditions in the primary, integrated care setting (Donnelly et al., 2014; Eichler & Royeen, 2016).

Occupational therapy services for individuals experiencing homelessness primarily have been provided in shelter settings or as an adjunct to care in hospital-based practice (Parmenter et al., 2013; Roy et al., 2017). The chaotic environment of the shelter, or the inconsistency of shelter staff, however, can affect the regularity of participation. Occupational therapy services in these settings may also rely primarily on group interventions or limited consultation by an occupational therapist in a student supervisor role, limiting the individualization or complex clinical reasoning that a full-time, experienced occupational therapist can provide (Herzberg & Finlayson, 2001; Muñoz et al., 2006). The National Health Care for the Homeless Council (2010) recommends that models of health care for adults experiencing homelessness should be integrated and interdisciplinary, flexible in service delivery, and assist clients in accessing secondary and tertiary medical care, such as occupational therapy. This type of environment is reflected in a FQHC. By co-locating in FQHC sites, occupational therapists have the opportunity to provide individual interventions and to collaborate with other health care providers to provide comprehensive care to a complex population (Halle et al., 2018; Merryman & Synovec, 2018). Merryman and Synovec (2020) explored the perceptions of providers in an integrated care environment using a FQHC model that served homeless adults regarding the integration of occupational therapy services.

Providers emphasized the importance of the function-based perspective of occupational therapy both in assessment and intervention and considered this as an important extension of comprehensive and team-based care, particularly in the area of functional cognition, stating that this information influenced care decisions and discharge plans (Merryman & Synovec, 2017; Merryman & Synovec, 2020).

Although there is support and evidence to indicate the benefit of occupational therapy services for adults experiencing homelessness and in integrated primary care settings, there is limited data regarding the role of occupational therapy in a FQHC. This paper provides a description of the individualized occupational therapy services provided in a FQHC specifically for adults experiencing homelessness. Initial outcomes of individual occupational therapy interventions are presented.

## **Program Description**

### ***Setting***

This ambulatory health care organization in an urban area is specifically designed to meet the complex needs of homeless individuals and follows an integrated primary care model (Bonin et al., 2010). The setting meets requirements as a FQHC, such as providing care on a sliding fee scale based on ability to pay and operating under a governing board that includes clients (US Department of Health and Human Services, Health Resources and Services Administration, 2018). Services are delivered on-site by interdisciplinary teams of providers, including physicians, nurses, social workers, case managers, and two full-time occupational therapists. Comprehensive services include medical care, mental health and addiction counseling, case management, and occupational therapy. The site also includes a supportive housing team, which provides long-term comprehensive support services to clients living in independent housing in the community. The organization receives greater than 75% of funding from insurance reimbursements or public grants and contracts. The setting is structured to provide team-based care in which providers are co-located to coordinate care, meet to discuss client needs, and share interdisciplinary care plans.

This agency established on-site, full-time occupational therapy services in 2015, following a 1-year feasibility pilot study in which the occupational therapist served in a consultative role once a week at the site (Merryman & Synovec, 2016). There are currently two full-time occupational therapy staff. The services provided by the occupational therapists include assessment, intervention, and consultation (see Table 1). This study focuses primarily on initial evaluation and intervention.

### ***Occupational Therapy Services***

Occupational therapy services are accessed by provider referral and are billed as is typical for Medicaid in the state in which services are provided. This state opted for Medicaid expansion and has a history of progressive health policy.

**Evaluation.** All occupational therapy clients engage with at least one interdisciplinary provider prior to referral to occupational therapy. Following the referral to occupational therapy services, each client completes an initial evaluation, including the Canadian Occupational Performance Measure (COPM). The COPM is used to identify goals for ongoing occupational therapy intervention (Law et al., 2014). During administration of the COPM, the occupational therapist interviews each client regarding three major domains of self-care, productivity, and leisure (Law et al., 2014). Following the interview, the client rates the priority of each area from 1–10, with 10 as the highest priority, and up to five of the priority areas identified as goals. The client then rates their performance and satisfaction for each goal on a 1–10 scale, with one indicating *not able to do activity at all* or *not satisfied at all*, and 10 indicating *able to do activity extremely well* or *extremely satisfied* (Law et al., 2014). Each individual goal rating is summed and averaged, resulting in an overall mean performance score and an overall mean satisfaction score (Law et al., 2014).

**Table 1***Occupational Therapy Services at a Federally Qualified Health Center*

<b>Type of service</b>	<b>Content</b>	<b>Duration</b>
Cognitive assessment	Standardized cognitive assessment	<ul style="list-style-type: none"> <li>– One-time screening</li> <li>– Re-assessment following change in health status</li> </ul>
Functional evaluation	<ul style="list-style-type: none"> <li>– Standardized functional assessment</li> <li>– Activity analysis of specific functional skills</li> </ul>	<ul style="list-style-type: none"> <li>– One-time evaluation</li> <li>– Re-assessment of skill performance following change in health or housing status</li> </ul>
Initial evaluation	COPM through client interview	<ul style="list-style-type: none"> <li>– Completed at initial appointment to identify goals for intervention</li> <li>– COPM re-administered every 60 days to assess for change in occupational performance following intervention</li> </ul>
Intervention	<ul style="list-style-type: none"> <li>– Skill development for functional activities: <ul style="list-style-type: none"> <li>• ADL such as: self-care routines, use of adaptive equipment</li> <li>• IADL such as: health and symptom management, home management and safety, money management, meal preparation and planning</li> <li>• Cognitive skills such as: compensatory strategies for recall, developing sustained attention, organizing and sequencing tasks</li> <li>• Developing healthy habits and routines</li> </ul> </li> <li>– Development of volunteer, work, leisure, and community roles</li> </ul>	<ul style="list-style-type: none"> <li>– Ongoing as indicated by initial evaluation and re-assessment</li> <li>– Length of services individualized client's abilities, circumstances, functional goal areas, and time needed to progress toward goals</li> </ul>
In-home safety assessment	Standardized home safety and in-home functional assessments	<ul style="list-style-type: none"> <li>– One-time visit for evaluation</li> <li>– 2–3 follow-up visits to provide and implement recommendations</li> </ul>
Consultation	<ul style="list-style-type: none"> <li>– Informal assessment of client in another provider's session</li> <li>– Discussion and care planning with provider regarding potential needs or appropriateness of referral to occupational therapy</li> <li>– Evaluation of environment and provide recommendations regarding program modifications</li> </ul>	<ul style="list-style-type: none"> <li>– May result in follow-up appointment with occupational therapist</li> <li>– Occupational therapist discusses case with primary provider with suggestions and strategies for provider's care plan</li> <li>– Occupational therapist assists with implementation of program and environmental changes and recommendations</li> </ul>

Following the evaluation, the client and the occupational therapist collaborate to establish a schedule for ongoing interventions. Frequency of intervention sessions are reflective of routine clinic schedules, client availability, and demonstrated need through the evaluation process, which is typically one time per week. As is routine in the setting, clients complete a reassessment at 60-day intervals to assess goal progression and ensure ongoing relevance, until discharge. When the COPM is readministered, clients have the opportunity to discontinue or add new goals up to a maximum of five goals.

Clients may also complete other standardized assessments to determine cognitive and functional skills, such as the Montreal Cognitive Assessment, the Allen Cognitive Level Screen-5, the Executive Function Performance Test, and the Assessment of Motor and Process Skills (Allen et al., 2007; Baum & Wolf, 2013; Fisher & Bray, 2010; Nasreddine et al., 2005; Synovec, 2018). Use of these assessments may provide a baseline of cognition or functional abilities and recommendations for team-based care. The COPM is used to measure change in occupational performance over time following the

occupational therapy intervention, facilitating a client-directed intervention process, aligning with the model of care of the agency (Bonin et al., 2010; Law et al., 2014).

**Intervention.** Intervention sessions are individualized for each client, focus on goal content areas identified on the COPM, and consider individual client and contextual factors influencing occupational performance. Sessions are comprised of three intervention methods: preparatory methods (e.g., cognitive skill development), purposeful activity (e.g., time management and organization, goal setting), and/or occupation-based activity (e.g., meal preparation, home management), in order to build skills specific to identified goal areas (AOTA, 2014). Intervention sessions facilitate client identification of barriers to occupational performance, including symptoms (e.g., low motivation, impulsivity), cognition (e.g., decreased attention, memory), behaviors (e.g., substance use, low frustration tolerance), environmental barriers (e.g., bathroom facilities with limited or no accessibility features), or lack of knowledge and experience (e.g., not having paid bills or budgeted). With identification of barriers, occupational therapy interventions provide opportunities for skill building, which may include problem-solving and identifying strategies to manage symptoms or impacted cognition, demonstration and practice of functional skills, and developing plans to apply and use strategies or skills in the community and outside of the clinic setting. When available, practice of skills in the applicable community setting are also completed, such as using adaptive equipment for bathing, visiting community resources for leisure engagement, or using a phone calendar application to enter in upcoming and scheduled appointments.

Most interventions occur onsite at the agency, where the occupational therapy office is convenient to other providers, although some occur in the community context, such as using public transportation or completing an instrumental activity of daily living (IADL) task in an apartment. Unlike traditional settings where medical necessity drives client access and dosage, clients engage in interventions until identified goals are met or the client elects to discontinue services; this collaboration is routine in this model of integrated care delivery. Pending client attendance, activity tolerance and session topic, in-clinic session lengths range from 20 to 60 min. Community based interventions may be longer because of time needed to complete the task in the community environment (e.g., grocery shopping).

**Delivery of Services.** The delivery of services is determined by best practices for this population to facilitate participation in the occupational therapy services. This includes following the scheduling structure familiar to agency clients (such as weekly individual appointments), location of occupational therapy services in the clinic, and referrals after clients are already connected to other providers in the agency (Bonin et al., 2010). Recommended service delivery is further reflected in the client-centered goal setting process and determination in the frequency of intervention sessions (Bonin et al., 2010). The structure of the setting attempts to enable participants to remain active despite common challenges encountered by those who are homeless (such as missed sessions, brief hospitalizations, or increased time needed to develop skills) and allows the occupational therapist to coordinate care with other providers. The routine practice is individual sessions because of client complexity and cognitive challenges that require the full attention of the occupational therapist to assess client performance.

## Method

### Study Design

A retrospective, descriptive program evaluation of the occupational therapy services integrated into the FQHC was completed. This data analysis specifically focused on client outcomes as measured by the COPM. This evaluation included: (a) percentage of referred clients who engaged in ongoing intervention, (b) diagnostic demographics of those referred for services, (c) functional goal types and frequency of goals, and (d) a comparison of preintervention COPM scores with current postintervention scores. All data were obtained using the agency's electronic medical record (EMR) system. A university institutional review board approved data collection using electronic medical records for intervention and assessments that had already occurred.

Individuals were included in the data analysis if they met the following criteria: (a) adults 18 years of age or older receiving occupational therapy services at the agency, (b) ability to consent, (c) ability to complete the COPM self-rating scales, and (d) engagement in occupational therapy services for at least 60 days (length of time not reflective of number of sessions) and complete both initial and at least one follow-up COPM score. Individuals were not excluded on the basis of presence of mental health symptoms, active substance use, or cognitive impairment.

### Measures

#### *Canadian Occupational Performance Measure*

The COPM has been found to detect change in performance and satisfaction following occupational therapy intervention. It is an effective tool for integrating client-centered interventions in community-based practices serving adults with mental illness, traumatic brain injury, and chronic health conditions as well as in primary care settings (Chesworth et al., 2002; Donnelly et al., 2017; Law et al., 2014; Phipps & Richardson, 2007; Speicher et al., 2014). In addition to responsiveness, the COPM has also been found to be a valid and reliable measure to detect changes in a client's self-perception of occupational performance over time (Law et al., 2014). The COPM has also been used to identify occupational performance needs in adults experiencing homelessness, although in these studies it was not used as an outcome measure (Chapleau et al., 2011; Muñoz et al., 2006; Salsi et al., 2017).

### Data Analysis

Data were extracted from the EMRs used by all providers at the site of services. A search feature in the EMR was used to gather relevant demographics, diagnoses, COPM data, and goal content areas.

Mental health and medical diagnoses were obtained and added to the problem list by medical and behavioral health providers and reflect the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (DSM-5), and the *International Classification of Diseases*, Tenth Revision (ICD-10) categories (American Psychiatric Association, 2013; WHO, 1992). A coding system for chronic health conditions, mental health diagnoses, and cognitive impairment was used for analysis. Because of the potential frequency of cognitive impairment in this population, individuals were identified as cognitive impairment or no cognitive impairment based on available information in the EMR.

As part of standard practice, all occupational therapy evaluations, including the COPM performance and satisfaction scores, are documented in the EMR by the occupational therapist, along with the specific goal areas and any notations regarding the adjustment of goals. Goals were coded into categories for analysis. Goal categories were developed to reflect performance areas of the COPM and language of the *Occupational Therapy Practice Framework* (AOTA, 2014). The goal categories were more expansive than the COPM domains of self-care, productivity, and leisure to delineate specific



performance and client factor areas, as these were more comprehensive and reflective of participant-identified goals (AOTA, 2014; Law et al., 2014).

On the COPM, an increase of at least 2 points higher from baseline score was considered significant improvement, consistent with the standard identified by authors of the instrument (Law et al., 2014). For individuals whose baseline was higher than 8, achieving a subsequent score of 10 was considered a significant improvement. To determine significance in the change in performance as measured by the COPM, *t* tests for matched pairs were conducted for the participants on three sets of scores: (a) baseline COPM scores, taken as the first score at the time of treatment onset; (b) highest scores, taken as the highest individual score at any time in treatment; and (c) greatest improvement score, taken as the difference between baseline and highest scores. All group comparisons were tested at a  $p < .05$  significance level. Highest scores were analyzed (vs. last score), as at the point in time of data collection some individuals were still engaged in occupational therapy services. An initial review of the data indicated scores dropped at the completion of one goal area and when replaced with a new goal. Thus, “highest” scores were more reflective of goal completion.

Because of the individualization of sessions, the number of sessions (dosage) completed by each client was also gathered to determine its impact on performance.

### Results

Forty-five individuals out of 83 of those completing an initial occupational therapy assessment for ongoing intervention met all inclusion criteria and were included in the analysis. This indicates 53% of those referred were able to sustain participation in ongoing intervention. Females comprised 22% of the sample and males comprised 78%. Ages ranged from 28 to 65 years of age.

Table 2 indicates that the participants referred to occupational therapy present with multiple complex medical and mental health conditions. The most frequently occurring diagnoses were mental health conditions, including mood disorder (71%) or substance abuse disorder (69%). The most frequently occurring medical conditions were those that affected cognition, including head trauma (51%) or other neurological condition, such as cerebrovascular accident (CVA) (31%).

**Table 2**

*Prevalence of Health Conditions of Clients Referred for Occupational Therapy*

Health condition	N	Percent total
Mood disorder	32	71
Substance abuse disorder	31	69
Head trauma	23	51
Neurologic/CVA	14	31
Chronic pain	13	29
Post-traumatic stress disorder	11	24
Psychotic disorder	7	16
Intellectual disability	6	13
Diabetes	5	11
Anxiety disorder	5	11
Cardiovascular	3	7
HIV	2	4

*Note.* Categories are not exclusive. (n = 45)

The analysis of goals identified a range of concerns among this population (see Table 3). The most frequently identified goal category fell in the COPM productivity domain, with a high frequency of IADL-focused goals (53%) (see Table 3). Goals related to cognition (17%) and time management and goal settings (14%) were the next most frequently identified (see Table 3). There was a smaller emphasis on self-care and ADLs (13%) and leisure and social engagement (7%) than might be anticipated based on previous literature (see Table 3).

**Table 3**  
*COPM Goals Identified for Occupational Therapy Intervention*

COPM domain	Goal category	Category total N (%)	Domain total N (%)
Self-care	ADLs	6 (6)	14 (13)
	Pain management and physical function	3 (3)	
	Functional and community mobility	5 (5)	
Productivity	Work/School/Volunteer	4 (4)	73 (70)
	Time and goal management	15 (14)	
	IADL ( <i>sub-categories</i> )	58 (53)	
	<i>Financial management</i>	20 (18)	
	<i>Meal preparation and grocery shopping</i>	14 (13)	
	<i>Health and symptom management</i>	11 (10)	
	<i>Home management</i>	9 (8)	
	<i>Home safety</i>	4 (4)	
Leisure/Social	Social	5 (5)	8 (7)
	Leisure	3 (3)	
Cognitive*	Memory	10 (9)	18 (17)
	Attention and concentration	4 (4)	
	Organization	4 (4)	

*Note.* Cognitive is not included as a COPM domain on the original form (Law et al., 2014).

Analysis of overall improvement in performance and satisfaction demonstrated significant improvement on goals for those that engaged in intervention. *t*-tests for matched pairs comparing baseline and highest COPM scores revealed that the difference between means was statistically significant for both performance and satisfaction categories (see Table 4). There were no statistically significant differences among the participants with mental health and/or chronic health conditions on both the COPM participation and satisfaction scores. The participants with cognitive impairment did not improve as frequently in both the performance and satisfaction categories in comparison to noncognitively impaired individuals. However, *t* tests comparing the baseline, highest, and greatest improvement scores failed to find any significant differences between those identified with cognitive impairment versus who were not.

**Table 4**  
*Change in COPM Performance and Satisfaction Scores between Initial and Highest Score*

COPM	Baseline			Highest			95% CI					
	Range	<i>M</i>	<i>Mdn</i>	Range	<i>M</i>	<i>Mdn</i>	<i>N</i>	<i>df</i>	<i>LL</i>	<i>UL</i>	<i>p</i> *	<i>t</i>
Performance	1.5	4.4	4.5	7	7.6	7.7	45	44	-3.9	2.5	<b>0.0</b>	-9.4
Satisfaction	7.3	3.6	4.0	9	7.6	8.0	45	44	-3.9	2.5	<b>0.0</b>	-9.0

*Note.* CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

\**p* < .05, one-tailed.

The number of sessions (dosage) ranged from 3–84. The three highest users of occupational therapy services identified both IADLs and cognitive goals and attended 84, 78, and 59 individual sessions, respectively. However, dosage was found to be so varied that there was little meaningful analysis that was able to be performed at this time.

### Discussion

The results of this study indicate that individuals experiencing complex mental and physical health conditions and homelessness improved in perceived performance and satisfaction in occupational performance following occupational therapy intervention in an integrated primary care setting operating as a FQHC. Overall, the participants who engaged in occupational therapy services demonstrated improvements in functional goal areas as indicated by the COPM, despite the presence of mental health diagnoses, multiple chronic medical conditions, cognitive impairment, and homelessness.

The findings support the use of the COPM to guide interventions for clients with complex health needs. The goals identified by the clients were diverse and more specific than the original domains of the COPM, demonstrating a high prioritization for IADLs skill development, despite a range of mental health, medical, cognitive, and social challenges. Cognitive skills and time management were also prioritized goals; these skills are critical to support the ability to complete IADLs, such as paying bills or managing a home. It is notable that the range of daily occupations addressed expands on previous literature regarding the occupational performance needs of adults experiencing homelessness and is reflective of the broad needs of a community-based population, supporting the need for individualized intervention (Grandisson et al., 2009; Illman et al., 2013; Marshall et al., 2017; Muñoz et al., 2006; Thomas et al., 2017). Because of the restricted contexts individuals who are homeless encounter, occupational therapy sessions provide an opportunity that may not be otherwise available to learn and apply skills to complete self-care and IADLs tasks successfully.

Use of the COPM empowers clients to engage in the goal setting process and direct their care while enabling the occupational therapist to use a variety of interventions and opportunities for skill building to increase overall functional abilities. Participation in the goal setting process combined with individualized treatment may have increased motivation to engage in services as tangible interventions directly applied to the participants' current needs and priorities. Although the participants identified similar goal content areas, the individualized interventions enabled the occupational therapist to tailor each of the intervention sessions to the specific needs, skills, and contexts of the client. This structure enables the occupational therapist to employ complex reasoning for a population whose needs may change as a result of the instability of circumstances and fluctuating symptoms. The ability of the occupational therapist to respond to individual needs likely contributed to the positive outcomes reflected in the COPM scores.

Integrating occupational therapy services into an established health care setting, such as a FQHC, rather than a shelter, enabled more consistent access to individuals needing services as well as to providers on the interdisciplinary treatment team. This finding supports previous research that integrated health care sites with care coordination enables client engagement, especially for those with chronic conditions, as the participants were able to access occupational therapy services at their regular site of care. Opportunities to access services according to clinical need rather than strict medical necessity in a familiar setting likely enabled client progress. The goals identified by the clients reflect the importance of services focused on IADLs development, and occupational therapy provides a unique focus on functional skills (Merryman & Synovec, 2020). This delivery model reflects the characteristics and fit

for occupational therapy in integrated primary care emphasized in the literature since FQHCs are designed to minimize the barriers that often prevent engagement in traditional health care and rehabilitation settings (Bonin et al., 2010; Dahl-Popolizio et al., 2016; Halle et al., 2018; Koverman et al., 2017). The ability of the occupational therapist to interact directly and collaborate with other providers increased continuity of care and consistency in strategies, which likely enhanced outcomes.

Despite individuals experiencing homelessness living in unstable and unsupportive contexts and with complex health conditions, this study shows this population can benefit from interventions targeting functional skills. Occupational therapy interventions differ from the routine behavioral health or medical interventions otherwise provided by a FQHC by focusing on the functional outcomes and goals of the clients versus diagnostic or symptom management. Access to functional skill development can enhance positive outcomes of improved and managed health and ultimately support a safe transition into housing and the broader community. Co-location of occupational therapy and membership on an interdisciplinary team using best practices for a FQHC enables routine access to referral sources and communication to coordinate and individualize care.

### **Limitations**

Although the results of this study indicate improvements following occupational therapy interventions, other moderating variables were not explored, such as whether the participants transitioned into housing during the intervention period or how many additional providers the participants engaged with during the intervention. As with any self-reporting tool, there may be limitations in accuracy of self-rated performance and satisfaction. However, the COPM has been demonstrated to match observable outcomes in various clinic and underserved populations; and measures that promote client participation in the recovery and treatment process are as valuable as observation (Chesworth et al., 2002; Donnelly et al., 2017; Speicher et al., 2014). Moderating variables could not be controlled; however, the heterogeneous population increases clinical relevance to similar programs.

Additional research to further refine the occupational therapy model and to identify the impact of moderators would be beneficial. Further research is also indicated to explore the outcomes of occupational therapy interventions with individuals unable to complete self-report scales in this setting, as those unable to complete the COPM may experience greater barriers to engaging in services. Finally, further research exploring dosage related to specific goal areas may be beneficial.

### **Conclusion**

This paper describes initial outcomes of occupational therapy services in a FQHC serving individuals experiencing homelessness. This study provides evidence that occupational therapy interventions for adults experiencing homelessness or unstable housing can result in functional improvements when routinely available and based on goal achievement, rather than strict reimbursement requirements for rapid client improvement. In addition, an interdisciplinary team approach in which occupational therapy is provided by full-time staff and co-located in integrated care and/or FQHC settings appears to make a difference in client access and, ultimately, outcomes. This model allows the occupational therapist to provide individualized intervention using a goal-centered process to meet functional needs.

This study has several implications for practice. First, the COPM is a valuable instrument that enables clients to self-assess the importance of functional challenges and rate satisfaction with progress. This may serve as a client motivator to influence engagement and participation, especially for more

marginalized populations. Second, occupational therapy is well-suited to address client goals in a complex population that is experiencing homelessness and has mental health, medical, and cognitive needs to improve functional performance, enhancing services offered by a FQHC. This focus is unique to occupational therapists. Finally, the ability to provide individual intervention, collaborate with the interdisciplinary team, and co-locate services in an integrated care setting, such as a FQHC, is a good fit for occupational therapy practice.

**Caitlin E. Synovec, OTD, OTR/L, BCMH**, is an occupational therapist and program manager at the National Institute for Medical Respite Care for the National Health Care for the Homeless Council. She was most recently an occupational therapist at the Baltimore Health Care for the Homeless Program.

**M. Beth Merryman, PhD, OTR/L, FAOTA**, is professor and chairperson in the Department of Occupational Therapy and Occupational Science at Towson University.

**Joshua Brusca, LCSW**, was the clinical performance improvement coordinator at Health Care for the Homeless, Baltimore, at the time this study was conducted. He currently serves as the program manager for Family Reunification at Lutheran Immigration and Refugee Services.

### References

- Allen, C. K., Austin, S. L., David, S. K., Earhart, C. A., McCraith, D. B., & Riska-Williams, L. (2007). *Manual for the Allen Cognitive Level Screen-5 (ACLS-5) and Large Allen Cognitive Level Screen-5 (LACLS-5)*. ACLS and LACLS Committee.
- American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy*, 68(Suppl. 1), S1–S48. <https://doi.org/10.5014/ajot.2014.682006>
- American Occupational Therapy Association. (2019). Cognition, cognitive rehabilitation, and occupational performance. *American Journal of Occupational Therapy*, 67(Suppl. 6), S9–S31. <https://doi.org/10.5014/ajot.2013.67s9>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association Publishing.
- Baggett, T. P., O'Connell, J. J., Singer, D. E., & Rigotti, N. A. (2010). The unmet health care needs of homeless adults: A national study. *American Journal of Public Health*, 100, 1326–1333. <https://doi.org/10.2105/ajph.2009.180109>
- Baum, C., & Wolf, T. (2013). *The Executive Function Performance Test*. Washington University School of Medicine. <https://www.ot.wustl.edu/about/resources/executive-function-performance-test-efpt-308>
- Baumgartner, J. N., & Herman, D. B. (2012). Community integration of formerly homeless men and women with serious mental illness after hospital discharge. *Psychiatric Services*, 63, 435–437.
- Bonin, E., Brehove, T., Carlson, C., Downing, M. Hoeft, J., Kalinowski, A., Solomon-Bame, J., & Post, P. (2010). *Adapting your practice: General recommendations for the care of homeless patients*. <http://www.nhchc.org/wp-content/uploads/2011/09/GenRecsHomeless2010.pdf>
- Burra, T. A., Stergiopoulos, V., & Rourke, S. B. (2009). A systematic review of cognitive deficits in homeless adults: Implications for service delivery. *Canadian Journal of Psychiatry*, 54, 123–133. <https://doi.org/10.1177/070674370905400210>
- Cherner, R. A., Aubry, T., & Ecker, J. (2017). Predictors of the physical and psychological integration of homeless adults with problematic substance use. *Journal of Community Psychology*, 45, 65–80.
- Chapleau, A., Seroczynski, A. D., Meyers, S., Lamb, K., & Haynes, S. (2011). Occupational therapy consultation for case managers in community mental health: Exploring strategies to improve job satisfaction and self-efficacy. *Professional Case Management*, 16(2), 71–79. <https://doi.org/10.1097/ncm.0b013e3181f0555b>
- Chesworth, C., Duffy, R., Hodnett, J., & Knight, A. (2002). Measuring clinical effectiveness in mental health: Is the Canadian Occupational Performance an appropriate measure? *British Journal of Occupational Therapy*, 65, 30–34. <https://doi.org/10.1177/030802260206500106>
- Cocozza Martins, D. (2008). Experiences of homeless people in the health care delivery system: A descriptive phenomenological study. *Public Health Nursing*, 25, 420–430. <https://doi.org/10.1111/j.1525-1446.2008.00726.x>
- Connolly, D., Anderson, M., Colgan, M., Montgomery, J., Clarke, J., & Kinsella, M. (2019). The impact of a primary care stress management and wellbeing programme (RENEW) on occupational participation: A pilot study. *British Journal of Occupational Therapy*, 82(2), 112–121. <https://doi.org/10.1177/0308022618793323>
- Dahl-Popolizio, S., Manson, L., Muir, S., & Rogers, O. (2016). Enhancing the value of integrated primary care: The role of occupational therapy. *Families, Systems, & Health*, 34(3), 270–280. <https://doi.org/10.1037/fsh0000208>
- Donnelly, C., Brenchley, C., Crawford, C., & Letts, L. (2014). The integration of occupational therapy into primary care: A multiple case study design. *BioMed Central Family Practice*, 14(1), 60–71. <https://doi.org/10.1186/1471-2296-14-60>
- Donnelly, C., O'Neill, C., Bauer, M., & Letts, L. (2017). Canadian Occupational Performance Measure (COPM) in primary care: A profile of practice.

- American Journal of Occupational Therapy*, 71, 1–8. <https://doi.org/10.5014/ajot.2017.020008>
- Dubuc, N., Bonin, L., Tourigny, A., Mathieu, L., Couturier, Y., Tousignant, M., Corbin, C., Delli-Colli, N., & Raiche, M. (2013). Development of integrated care pathways: Toward a care management system to meet the needs of frail and disabled community-dwelling older people. *International Journal of Integrated Care*, 13(2), 1–13. <https://doi.org/10.5334/ijic.976>
- Eichler, J., & Roveen, L. (2016). Occupational therapy in the primary health care clinic: Experiences of two clinicians. *Families, Systems, & Health*, 34(3), 289–291. <https://doi.org/10.1037/fsh0000226>
- Ellis, H., & Alexander, V. (2016). Eradicating barriers to mental health care through integrated service models: Contemporary perspectives for psychiatric-mental health nurses. *Archives of Psychiatric Nursing*, 30(3), 432–438. <https://doi.org/10.1016/j.apnu.2016.01.004>
- Engineer, C. Y., Aswani, M., Peters, D., Gundla, A. M., & Bennett, S. (2015). Empower integrated health care delivery: Rapid review of change management across healthcare organizations. *International Journal of Integrated Care*, 15(8), 35–37. <https://doi.org/10.5334/ijic.2304>
- Fisher, A. G., & Bray Jones, K. (2010). *Assessment of Motor and Process Skills. Vol. 1: Development, standardization, and administration manual* (7th ed.). Three Star Press.
- Foster, S., LeFauve, C., Kresky-Wolff, M., & Rickards, L. D. (2010). Services and supports for individuals with co-occurring disorders and long-term homelessness. *Journal of Behavioral Health Services & Research*, 37, 239–251. <https://doi.org/10.1007/s11414-009-9190-2>
- Gibson, R. W., D'Amico, M., Jaffe, L., & Arbesman, M. (2011). Occupational therapy interventions for recovery in the areas of community integration and normative life roles for adults with serious mental illness: A systematic review. *American Journal of Occupational Therapy*, 65, 247–256. <https://doi.org/10.5014/ajot.2011.001297>
- Grandisson, M., Mitchell-Carvalho, M., Tang, V., & Korner-Bitensky, N. (2009). Occupational therapists' perceptions of their role with people who are homeless. *British Journal of Occupational Therapy*, 72(11), 491–498. <https://doi.org/10.4276/030802209x12577616538672>
- Gulcur, L., Tsemberis, S., Stefancic, A., & Greenwood, R. (2007). Community integration of adults with psychiatric disabilities and histories of homelessness. *Community Mental Health Journal*, 43(3), 211–228.
- Gutman, S. A., & Raphael-Greenfield, E. I. (2017). Effectiveness of a supportive housing program for homeless adults with mental illness and substance abuse: A two-group controlled trial. *British Journal of Occupational Therapy*, 80, 286–293. <https://doi.org/10.1177/0308022616680368>
- Halle, A. D., Mroz, T. M., Fogelberg, D. J., & Leland, N. E. (2018). Occupational therapy and primary care: Updates and trends. *American Journal of Occupational Therapy*, 72. <https://doi.org/10.5014/ajot.2018.723001>
- Health Care for the Homeless Clinicians' Network. (2010). *General recommendations for the care of homeless patients: Summary of recommended practice adaptations*. <https://www.nhchc.org/resources/clinical/adapted-clinical-guidelines/>
- Helfrich, C. A., & Fogg, L. F. (2007). Outcomes of a life skills intervention or homeless adults with mental illness. *Journal of Primary Prevention*, 28, 313–326. <https://doi.org/10.1007/s10935-007-0103-y>
- Helfrich, C. A., & Synovec, C. E. (2019). Homeless and women's shelters. In C. Brown, V. C. Stoffel, & J. P. Muñoz (Eds.), *Occupational therapy in mental health* (pp. 672–690). F. A. Davis.
- Henwood, B. F., Derejko, K., Couture, J., & Padgett, D. K. (2015a). Maslow and mental health recovery: A comparative study of homeless programs for adults with serious mental illness. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(2), 220–228.
- Herzberg, G., & Finlayson, M. (2001). Development of occupational therapy in a homeless shelter. *Occupational Therapy in Health Care*, 13(3-4), 131–144. [https://doi.org/10.1080/j003v13n03\\_11](https://doi.org/10.1080/j003v13n03_11)
- Ikiugu, M. N., Nissen, R. M., Bellar, C., Maassen, A., & Van Peursem, K. (2017). Centennial Topics-Clinical effectiveness of occupational therapy in mental health: A meta-analysis. *American Journal of Occupational Therapy*, 71, 7105100020. <https://doi.org/10.5014/ajot.2017.024588>
- Illman, S. C., Spence, S., O'Campo, P., & Kirsh, B. (2013). Exploring the occupations of homeless adults living with mental illnesses in Toronto. *Canadian Journal of Occupational Therapy*, 80(4), 215–223. <https://doi.org/10.1177/0008417413506555>
- Jones, C. A., Perera, A., Chow, M., Ho, I., Nguyen, J., & Davachi, S. (2009). Cardiovascular disease risk among the poor and homeless – What we know so far. *Current Cardiology Reviews*, 5, 69–77. <https://doi.org/10.2174/157340309787048086>
- Kloos, B., & Shah, S. (2009). A social ecological approach to investigating relationships between housing and adaptive functioning for persons with serious mental illness. *American Journal of Community Psychology*, 44, 316–326.
- Koverman, B., Roveen, L., & Stoykov, M. (2017). Occupational therapy in primary care: Structures and processes that support integration. *Open Journal of Occupational Therapy*, 5(3) 1–9. <https://doi.org/10.15453/2168-6408.1376>
- Law, M., Baptiste, S., Carswell, S., McColl, M. A., Polatajko, H. J., & Pollock, N. (2014). *Canadian Occupational Performance Measure* (5th ed.). CAOT Publications ACE.
- LeBrun-Harris, L. A., Baggett, T. P., Jenkins, D. M., Sripipatana, A., Sharma, R., Hayashi, A. S., Daly, C. A., & Ngo-Metzger, Q. (2013). Health status and health care experience among homeless patients in federally supported health centers: Findings from the 2009 patient survey. *Health Services Research*, 48(3), 992–1017. <https://doi.org/10.1111/1475-6773.12009>
- Leland, N. E., Fogelberg, D. J., Halle, A. D., & Mroz, T. M. (2016). Occupational therapy and



- management of multiple chronic conditions in the context of Health Care Reform. *American Journal of Occupational Therapy*, 71, 7101090010p1–7101090010p6. <https://doi.org/10.5014/ajot.2017.711001>
- Marshall, C. A., & Rosenberg, M. W. (2014). Occupation and the process of transition from homelessness. *Canadian Journal of Occupational Therapy*, 81(5), 330–338.
- Marshall, C., Lysaught, R., & Krupa, T. (2017). The experience of occupational engagement of chronically homeless persons in a mid-sized urban context. *Journal of Occupational Science*, 24(2), 165–180. <https://doi.org/10.1080/14427591.2016.1277548>
- Merryman, M. B., & Synovec, C. (2016, April). *Effects of consultative occupational therapy interventions on homeless adults with serious mental illness*. Research poster presented at the American Occupational Therapy Association Annual Conference, Chicago, IL.
- Merryman, M. B., & Synovec, C. (2017, March). *Expanding mental health occupational therapy to emerging settings: Provider perspectives*. Research poster presented at the American Occupational Therapy Association Annual Conference, Philadelphia, PA.
- Merryman, M. B., & Synovec, C. (2018, April). *Exploration of contextual factors and reasoning guiding occupational therapy services in integrative community health care with homeless adults*. Poster presented at the American Occupational Therapy Association Annual Conference, Salt Lake City, UT.
- Merryman, M. B., & Synovec, C. (2020). Integrated care: Provider perceptions of occupational therapy services for homeless adults. *WORK: A Journal of Prevention, Assessment & Rehabilitation*, 65(2), 321–330.
- Miller-Cribbs, J. E., Wen, F., Coon, K. A., Jelley, M. J., Foulks-Rodriguez, K., & Stearns, J. (2016). Adverse childhood experiences and inequities in adult health care access. *International Public Health Journal*, 8, 257–270. <https://doi.org/10.1093/pubmed/fdx155>
- Montenegro, H., Holder, R., Ramagem C., Urrutia, S., Fabrega, R., Tasca, R., Alfaro, G., Salgado, O., & Gomes, M. A. (2011). Combating health care fragmentation through integrated health service delivery networks in the Americas: Lessons learned. *Journal of Integrated Care*, 19(5), 5–16. <https://doi.org/10.1108/14769011111176707>
- Muir, S. (2012). Occupational therapy in primary health care: We should be there. *American Journal of Occupational Therapy*, 66(5), 506–510. <https://doi.org/10.5014/ajot.2012.665001>
- Muñoz, J. P., Garcia, T., Lisak, J., & Reichenbach, D. (2006). Assessing the occupational performance priorities of people who are homeless. *Occupational Therapy in Health Care*, 20(3-4), 135–148. [https://doi.org/10.1300/J003v20n03\\_09](https://doi.org/10.1300/J003v20n03_09)
- Murphy, A. D., Griffith, V. M., Berkeridge, T., Mroz, T. M., & Jirikowic, T. L. (2017). Primary care for underserved populations: Navigating policy to incorporate occupational therapy into federally qualified health centers. *American Journal of Occupational Therapy*, 71, 7102090010p1–7102090010p5. <https://doi.org/10.5014/ajot.2017.712001>
- Nasreddine, Z. S., Phillips N. A., Bédirian, V., Charbonneau, S., Whitehead, V., Collin, I., Cummings, J. L., & Chertkow, H. (2005). The Montreal Cognitive Assessment, MoCA: A brief screening tool for mild cognitive impairment. *Journal of the American Geriatric Society*, 53, 695–699. <https://doi.org/10.1111/j.1532-5415.2005.53221.x>
- Nickasch, B., & Marnocha, S. K. (2009). Healthcare experiences of the homeless. *Journal of the American Academy of Nurse Practitioners*, 21, 39–46. <https://doi.org/10.1111/j.1745-7599.2008.00371.x>
- Pape, S., & Muir, S. (2019). Primary care occupational therapy: How can we get there? Remaining challenges in patient-centered medical homes. *American Journal of Occupational Therapy*, 73, 7305090010p1–7305090010p6. <https://doi.org/10.5014/ajot.2019.037200>
- Parmenter, V., Fieldhouse, J. & Barham, R. (2013). An occupational therapy intervention service to hostels for homeless people: An overview. *British Journal of Occupational Therapy*, 76(5), 242–245. <https://doi.org/10.4276/030802213X13679275042807>
- Patient Protection and Affordable Care Act, Pub. L. 111-148, 42 U.S.C. (2010).
- Pelimanni, E., & Jehkonen, M. (2019). Type 2 Diabetes and cognitive functions in middle age: A meta-analysis. *Journal of the International Neuropsychological Society*, 25(2), 215–229. <https://doi.org/10.1017/S1355617718001042>
- Phipps, S., & Richardson, P. (2007). Occupational therapy outcomes for clients with traumatic brain injury and stroke using the Canadian Occupational Performance Measure. *American Journal of Occupational Therapy*, 61, 328–334. <https://doi.org/10.5014/ajot.61.3.328>
- Powell, J. M., Rich, T. J., & Wise, E. K. (2016). Effectiveness of occupation- and activity-based interventions to improve everyday activities and social participation for people with traumatic brain injury: A systematic review. *American Journal of Occupational Therapy*, 70, 7003180040p1–7003180040p9. <https://doi.org/10.5014/ajot.2016.020909>
- Pyatak, E. A., Carandang, K., Vigen, C. L. P., Blanchard, J., Diaz, J., Concha-Chaves, A., Sequeira, P. A., Wood, J. R., Whittemore, R., Spruiit-Metz, D., & Peters, A. L. (2018). Occupational therapy intervention improves glycemic control and quality of life among young adults with diabetes: The Resilient, Empowered, Active Living with Diabetes (REAL Diabetes) randomized controlled trial. *Diabetes Care*, 41(4), 696–704. <https://doi.org/10.2337/dc17-1634>
- Radomski, M. V., Anheluk, M., Bartzén, M. P., & Zola, J. (2016). Effectiveness of interventions to address cognitive impairments and improve occupational performance after traumatic brain injury: A systematic review. *American Journal of Occupational Therapy*, 70, 7003180050p1–7003180050p9. <https://doi.org/10.5014/ajot.2016.020776>
- Reid, K. W., Vittinghoff, E., & Kushel, M. B. (2008). Association between the level of housing

- instability, economic standing, and health care access: A meta-regression. *Journal of Health Care for the Poor and Underserved*, 19(4), 1212-1228. <https://doi.org/10.1353/hpu.0.0068>
- Roy, L., Vallee, C., Kirsh, B. H., Marshall, C. A., Marval, R., & Low, A. (2017). Occupation-based practices and homelessness: A scoping review. *Canadian Journal of Occupational Therapy*, 84, 98-110. <https://doi.org/10.1177/0008417416688709>
- Rumball-Smith, J., Wodchis, W. P., Kone, A., Kenealy, T., Barnsley, J., & Ashton, T. (2014). Under the same roof: Co-location of practitioners within primary care is associated with specialized chronic care management. *BioMed Central Family Practice*, 15(149). <https://doi.org/10.1186/1471-2296-15-149>
- Salsi, S., Awadallah, Y., Leclair, A. B., Breault, M. L., Duong, D. T., & Roy, L. (2017). Occupational needs and priorities of women experiencing homelessness. *Canadian Journal of Occupational Therapy*, 84, 229-241. <https://doi.org/10.1177/0008417417719725>
- Schwartz, J. K., Grogan, K. A., Mutch, M. J., Nowicki, E. B., Seidel, E. A., Woelfel, S. A., & Smith, R. O. (2017). Intervention to improve medication management: Qualitative outcomes from a phase I randomized controlled trial. *American Journal of Occupational Therapy*, 71, 7106240010p1-7106240010p10. <https://doi.org/10.5014/ajot.2017.021691>
- Speicher, S. M., Walter, K. H., & Chard, K. M. (2014). Interdisciplinary residential treatment of posttraumatic stress disorder and traumatic brain injury: Effects on symptom severity and occupational performance and satisfaction. *American Journal of Occupational Therapy*, 68, 412-421. <https://doi.org/10.5014/ajot.2014.011304>
- Stubbs, J. L., Thornton, A. E., Seivick, J. M., Silverberg, N. D., Barr, A. M., Honer, W. G., & Panenka, W. J. (2019). Traumatic brain injury in homeless and marginally housed individuals: A systematic review and meta-analysis. *Lancet Public Health*, [https://doi.org/10.1016/S2468-2667\(19\)30188-4](https://doi.org/10.1016/S2468-2667(19)30188-4)
- Substance Abuse and Mental Health Administration [SAMHSA]. (2011). *Current statistics on the prevalence and characteristics of people experiencing homelessness in the United States*. Author. [https://www.samhsa.gov/sites/default/files/programs\\_campaigns/homelessness\\_programs\\_resources/hrc-factsheet-current-statistics-prevalence-characteristics-homelessness.pdf](https://www.samhsa.gov/sites/default/files/programs_campaigns/homelessness_programs_resources/hrc-factsheet-current-statistics-prevalence-characteristics-homelessness.pdf)
- Swarbrick, M., & Noyes, S. (2018). Effectiveness of occupational therapy services in mental health practice. *American Journal of Occupational Therapy*, 72(5). <https://doi.org/10.5014/ajot.2018.725001>
- Synovec, C. E. (2018). *Occupational therapy in health care agencies serving adults experiencing homelessness: Outcomes of a pilot model* (Doctoral dissertation). <https://hdl.handle.net/2144/32722>
- Thomas, Y., Gray, M., & McGinty, S. (2011). A systematic review of occupational therapy interventions with homeless people. *Occupational Therapy in Health Care*, 25(1), 38-53. <https://doi.org/10.3109/07380577.2010.528554>
- Thomas, Y., Gray, M. A., & McGinty, S. (2017). The occupational wellbeing of people experiencing homelessness. *Journal of Occupational Science*, 24(2), 181-192. <https://doi.org/10.1080/14427591.2017.1301828>
- Topolovec-Vranic, J., Schuler, A., Gozdzik, A., Somers, J., Bourque, P. E., Frankish, C. J., Jbilou, J., Pakzad, S., Lazgare, L. I. P., & Hwang, S. W. (2017). The high burden of traumatic brain injury and comorbidities amongst homeless adults with mental illness. *Journal of Psychiatric Research*, 87, 53-60. <https://doi.org/10.1016/j.jpsychires.2016.12.004>
- Tsai, J., Mares, A. S., & Rosencheck, R. A. (2012). Does housing chronically homeless adults lead to social integration? *Psychiatric Services*, 63, 427-434. <https://doi.org/10.1176/appi.ps.201100047>
- U. S. Department of Health and Human Services, Health Resources and Services Administration. (2018). *Federally qualified health centers*. <https://www.hrsa.gov/opa/eligibility-and-registration/health-centers/fqhc/index.html>
- Wei, M. Y., Levine, D. A., Zahodne, L. B., Kabeto, M. U., & Langa, K. M. (2019). Multimorbidity and cognitive decline over 14 years in older Americans. *The Journals of Gerontology: Series A*, 1-8. <https://doi.org/10.1093/gerona/glz147>
- Winship, J. M., Ivey, C. K., & Etz, R. S. (2019). Opportunities for occupational therapy on a primary care team. *American Journal of Occupational Therapy*, 73, 7305185010p1-7305185010p10. <https://doi.org/10.5014/ajot.2019.030841>
- Wong, Y. L. I., & Solomon, P. L. (2002). Community integration of persons with psychiatric disabilities in supportive independent housing: A conceptual model and methodological considerations. *Mental Health Services Research*, 4, 13-28.
- World Health Organization. (1992). *The ICD-10 classification of mental and behavioral disorders: Clinical descriptions and diagnostic guidelines*. Geneva: World Health Organization. <https://apps.who.int/iris/handle/10665/37958>
- World Health Organization. (2018). *Access to rehabilitation in primary health care: An ongoing challenge*. Geneva: World Health Organization. <https://apps.who.int/iris/bitstream/handle/10665/325522/WHO-HIS-SDS-2018.40-eng.pdf>
- Yanos, P., Barrow, S., & Tsemberis, S. (2004). Community integration in the early phase of housing among homeless persons diagnosed with severe mental illness: Successes and challenges. *Community Mental Health Journal*, 40(2), 133-150.
- Yanos, P. T., Felton, B. J., Tsemberis, S., & Frye, V. A. (2007). Exploring the role of housing type, neighborhood characteristics, and lifestyle factors in the community integration of formerly homeless persons diagnosed with mental illness. *Journal of Mental Health*, 16, 703-717.
- Zlotnick, C., & Zerger, S. (2008). Survey findings on characteristics and health status of clients treated by the federally funded (US) Health Care for the Homeless Programs. *Health and Social Care in the Community*, 17, 18-26. <https://doi.org/10.1111/j.1365-2524.2008.00793.x>